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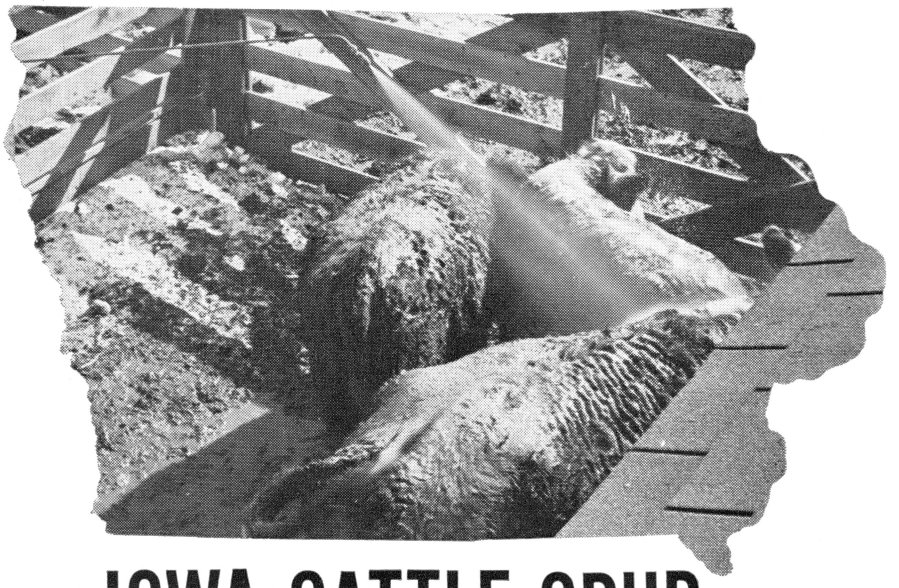

IOWA CATTLE GRUB CONTROL REPORT

By Harold J. Stockdale

MUCH HAS been said in recent years about beef cattle grub control in Iowa. The Iowa State University Extension Service, the Marketing Division of the Iowa Department of Agriculture, Iowa packing companies, and Livestock Conservation, Inc., teamed up a couple of years ago in a campaign to lower the beef losses caused by this insect.

What has happened? Did Iowa cattle feeders and producers respond? You bet they did.

If the experience of one Iowa packer is representative, the number of grubby cattle has dropped more than 60 percent in peak months the past two years (Figure 1). This packer found an average of 33 percent of his cattle were infested with grubs during the third week of March in 1964 and 1965—before the intensified grub control campaign was launched. The average for all Iowa packers the past two years during this same third week in March was 14 percent.

Several factors in the cattle grub control program make it a rather difficult program to "sell."

First, animals *must* be treated while the grubs are hidden within the animal. In other words—animals must be treated without knowing the level of infestation or even if any grubs are present at all.

Second, treatment with systemic grub control insecticides immediately after the adult heel fly egg-laying season will give best results. Treating early is sometimes difficult or impossible because many feeder cattle are shipped into Iowa several months after this most favorable treatment time has past.

Third, occasionally but rarely, late-treated cattle have developed symptoms known in the field as "shock reactions." These symptoms are believed to be caused when the grubs are in a critical region of the body (gullet or near the spinal canal) at the time of treatment. The foreign protein (dying grub) sets up a physiological reaction within the animal, and symptoms like bloating or staggering may appear.

Fourth, the heel fly egg-laying season is earlier in the southern United States. This puts the proper grub-treating time much earlier on southern cattle than cattle summered in northern areas. So it's extremely important to *know* the "origin" of cattle to know when grub treatment should be applied.

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Life Cycle

In Iowa, adult heel flies start emerging with the arrival of warm weather in May. Adult flies mate and the female glues her eggs to the hair of the lower legs and belly of the animal. The eggs hatch in a few days, and the tiny maggot crawls down the hair to the skin where it penetrates the hide. The grub gets into the connective tissue and spends the next 6 to 8 months migrating to the back region.

The common cattle grub's migratory route takes it to the connective tissue of the gullet or throat. After a few weeks here, it continues to the back region, arriving sometime in January. It cuts a hole in the hide and completes its development as a cyst just under the skin. In late winter or early spring it drops to the ground, gets under trash and pupates, emerging with the arrival of warm weather.

The northern cattle grub seems to bypass the gullet region. It apparently lingers in the spinal canal region before making its appearance in the back, usually a few weeks later than the common cattle grub. Sometime in February it will show up in the back region.

These are some of the reasons why grub control is not simple or easy.

Why control grubs in the first place? What are the causes of losses? Do grubby cattle gain as well as grub-free cattle?

The largest single factor in losses due to cattle grubs is damaged carcasses. These show up when infested animals are slaughtered during the winter months when the grubs are reaching the back region.

These grubs must be trimmed from the carcass. The trimmed carcass in turn sells for $1 to $3 less per hundredweight than non-trimmed, damage-free carcasses. This can run into big money in a hurry.

Although the meat is not damaged, the red meat is exposed by trim operations and its keeping quality in the butcher shop is shortened. The retail meat store will not pay top prices for beef that has no protective rind over the expensive loin area.

Because the grub finishes its life cycle in the animal in a cyst in the

back, the breathing holes cut in the skin cause the hides to sell for a reduced price.

Heavy infestations of grubs (15 to 50) will adversely affect rate of gain. Lower infestations (1 to 15) may not reduce feedlot performance, but 10 grubs in an animal can reduce the carcass value $3 per hundredweight.

When to Treat

Treatment time varies with location. For your treatment time, see the United States map (Figure 2) which is divided into zones. The date listed on each zone is the suggested cut-off date for grub treatments on cattle that spent the heel fly egg-laying season in that area. This is an approximation, and the season may vary somewhat from year to year.

Cattle feeders should use the map to determine when cattle purchased from other areas of the United States should be treated. Southern Texas cattle arriving in Iowa in June should be treated when they arrive.

How to Treat

Three methods of treatment of cattle are available: feed additive, pour-on and spray.

Feed additive: Ronnel is the active ingredient available in several formulations. It is fed for 7-, 10- or 14-day feeding periods, depending on the formulation used. It may increase the work during the feeding period, but does not require additional facilities or equipment. Grub control has been excellent.

Pour-on: For some cattle feeders with chute facilities, the pour-on method has been popular. Co-Ral, Neguvon and Ruelene are available to use with this method. A small amount of material is placed on the middle of the back region of the animal with a long-handled dipper as the cattle are worked through a squeeze chute. The number of ounces used depends on size of the animal and material used.

The pour-on method also will kill all living sucking lice present at the time of treatment, but louse eggs which hatch several days after treatment may cause reinfestation.

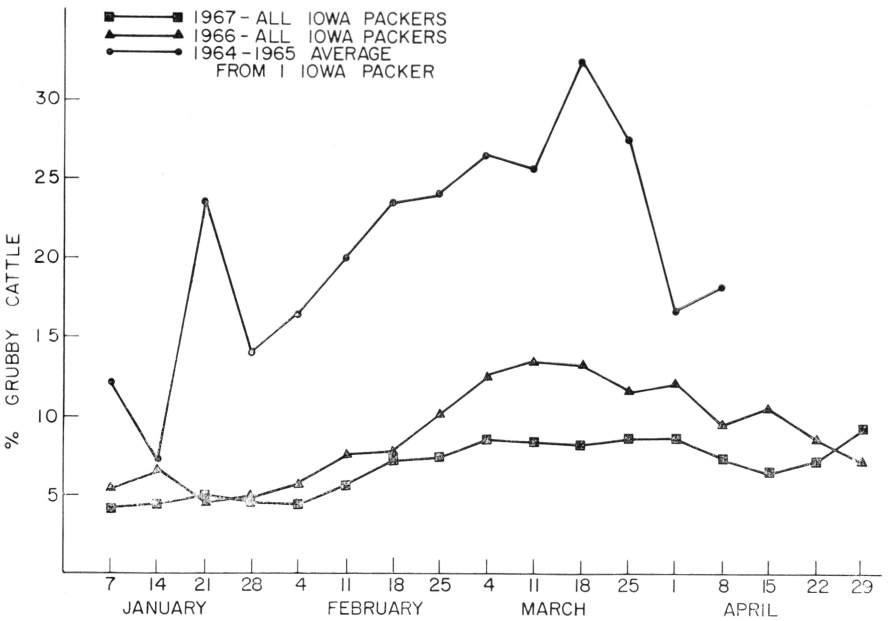

FIGURE 1—Number of grubby cattle reported by Iowa packers in recent years.

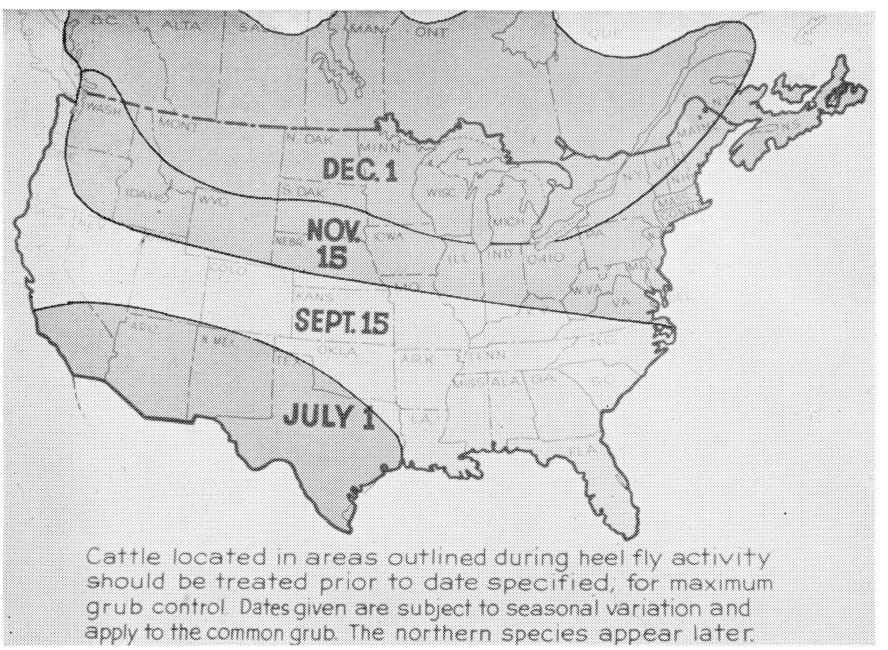

FIGURE 2

Spray method: Spraying is the oldest method, and has the most failures. For adequate grub control, these requirements *must* be met: (1) Spray pressures of 250 to 350 psi; (2) direct pencil stream spray; and (3) 1 gallon of material per head, and all animals must receive their share, which requires spraying only a few animals at a time.

Co-Ral, Neguvon and Ruelene are also available as spray materials. All of these materials will do an excellent job of grub control *if the three requirements mentioned are met.* In addition, the spray method gives excellent control of both sucking and chewing lice.

Remember, insecticides are toxic materials. Careless use and overdosing can result in serious accidents to the animals or the user of these materials. Read the labels and following mixing and restrictive directions to the letter.